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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/739,897	12/20/2000	Warren Sande	71493-864/jpw	4926

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EXAMINER

WARE, CICELY Q

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 02/23/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/739,897

Applicant(s)

SANDE ET AL.

Examiner

Cicely Ware

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 10-13 and 15 is/are allowed.
- 6) ☒ Claim(s) 1, 3-9 and 14 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "115" has been used to designate both "a 1's detector" and "a 1's counter". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to under 37 CFR 1.83(a) because Fig. 1 fails to show control line 112 to the samples counter 130 as described in the specification (Pg. 10, lines 31-32, Pg. 12, lines 11-13). Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:
 - a. Pg. 10, line 12, applicant uses the acronym "WDM". Examiner suggest applicant spell out initial reference to all acronyms.
 - b. Pg. 10, line 14, applicant makes reference to "a 1's counter 120" in figure 1. Examiner suggests applicant change in figure 1 block "1's" (115) to 120.

Claim Rejections - 35 USC § 112

4. Claims 1 and 2 recite the limitation
 - a. "the number of samples" and "the ratio" in claim 1
 - b. "the time-synchronous logical inverse" in claim 2

There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Marrow (US Patent 5,938,790).

(1) With regard to claim 1, Marrow discloses a method of determining whether the bit disparity in a data stream is acceptable (col. 2, lines 63-67, col. 3, lines 1-8), comprising the steps of: sampling the data stream (col. 1, lines 41-42, col. 4, lines 14-16), detecting the number of samples of the data stream which have a predetermined one of two logical values within a time period (col. 4, lines 40-44, col. 5, lines 4-8), calculating the ratio of samples detected to have the predetermined logical value to the number of samples considered, and comparing the calculated ratio with a predetermined acceptable threshold (col. 6, lines 6-16).

(2) With regard to claim 14, claim 14 inherits all the limitations of claim 1.

Furthermore Marrow discloses a computer-readable medium for storing computer-executable instructions which, when executed by a processor in a bit disparity monitor corresponding to a data stream (col. 2, lines 63-67, col. 3, lines 1-8).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marrow (US Patent 5,938,790) as applied to claim 1, in view of Dike et al. (US Patent 6,229,462).

(1) With regard to claim 3, inherits all the limitations of claim 1. However Marrow does not disclose a sub-sampler for sub-sampling the data stream.

However Dike et al. discloses an optical sound system comprising a sub-sampler for sub-sampling the data stream (col. 6, lines 28-37).

Therefore it would have been obvious to one of ordinary skill in the art to modify Marrow to incorporate a sub-sampler for sub-sampling the data stream in order to have a serial line bit disparity minimization circuitry that does not need to run at the serial line clock signal speed (Dike et al. col. 2, lines 60-62).

(2) With regard to claim 4, claim 4 inherits all the limitations of claim 3. Marrow further discloses a bit disparity monitor in which the detector identifies samples having a value of logical one (Fig. 3(69), Fig. 4, col. 5, lines 50-53).

(3) With regard to claim 5, claim 5 inherits all the limitations of claim 3. Dike et al. discloses the sub-sampler sampling at the clock edge. Dike et al. does not explicitly disclose a sampling rate for the sub-sampling. However it is well known in the art that sampling can only take place with a sampling rate therefore the sampling rate of the sampler varies with design.

(3) With regard to claim 6, claim 6 inherits all the limitations of claim 3. Marrow further discloses a transmitter for transmitting a data stream along a communication link, comprising the bit disparity monitor (Fig. 3(69), col. 1, line 7).

(4) With regard to claim 7, claim 7 inherits all the limitations of claim 3. Marrow further discloses a node for connection with a communications link along which the node may transmit a data stream, comprising the bit disparity monitor (Fig. 1, Fig. 3(17,69), Fig. 4, col. 2, lines 63-67, col. 3, lines 1-8, col. 5, lines 50-53).

(5) With regard to claim 8, claim 8 inherits all the limitations of claim 3. Marrow further discloses a communications network comprising nodes interconnected by communications links along which data streams are transmitted and received, comprising the bit disparity monitor (Fig. 3 (17, 69), Fig. 4, col. 2, lines 63-67, col. 3, lines 1-8, col. 5, lines 50-53).

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marrow (US Patent 5,938,790) in view of Dike et al. (US Patent 6,229,462).

With regard to claim 9, Marrow discloses a 1's detector coupled to the sum-sampler for identifying those samples of the data stream which have a logical value of one (Marrow col. 5, lines 4-8); a 1's counter coupled to the 1's detector for determining the number of identified samples within a time period (Marrow Fig. 4, col. 5, lines 4-8); a timer coupled to the 1's counter and the samples counter for indicating the start and end of the time period (Marrow Fig. 2(49), col. 4, lines 17-25); a comparator coupled to the 1's counter for comparing the number of identified samples with the total number of samples taken within the time period (Marrow Fig. 4 (107, 111); and a memory element coupled to the comparator for storing the comparison results for monitoring (Marrow Fig. 3 (83)). However Marrow does not disclose a sub-sampler for sub-sampling the data stream; a samples counter for determining the number of samples within the time period; and a clock generator coupled to the sub-sampler for indicating when a sample should be taken a coupled to the samples counter for indicating when a sample was taken.

However Dike et al. discloses a method for minimizing disparity comprising a sub-sampler for sub-sampling the data stream; a samples counter for determining the number of samples within the time period; a clock generator coupled to the sub-sampler for indicating when a sample should be taken and coupled to the samples counter for indicating when a sample was taken (col. 3, lines 20-32, 63-67, col. 4, lines 1-49, col. 6, lines 28-37).

Therefore it would have been obvious to one of ordinary skill in the art to modify Marrow to incorporate a sub-sampler for sub-sampling the data stream; a samples counter for determining the number of samples within the time period and a clock generator coupled to the sub-sampler for indicating when a sample should be taken and coupled to the samples counter for indicating when a sample was taken in order to have serial line bit disparity minimization circuitry that does not need to run at the serial line clock signal speed (Dike et al. col. 2, lines 60-62)

Allowable Subject Matter

10. Claims 2, 10, 11, 12, 13 and 15 are allowed.
12. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a method of determining whether the bit disparity in a data stream is acceptable. Prior art references show similar methods but fail to teach detecting the number of samples of the inverted data stream and a second sub-sampler for sub-sampling the inverted data stream.

Conclusion

13. The prior art made record of an not relied upon is considered pertinent to applicant's disclosure:
 - a. Coles US Patent 5,784,409 discloses method and coders for encoding data.
 - b. Davidson et al. (IEEE, High Density Magnetic Recording Using Digital

Block codes of Low Disparity)


14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 703-305-8326. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cicely Ware

cqw
February 9, 2004



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